

REMARKS

This application has been reviewed in light of the Office Action dated March 25, 2004. Claims 1, 5-10, 21, and 25-30 are pending in this application and have been amended to define still more clearly what Applicants regard as their invention. Claims 2-4, 11-20, 22-24, and 31-40 have been cancelled, without prejudice or disclaimer of subject matter. Claims 1 and 21 are in independent form. Favorable reconsideration is requested.

The Office Action rejected Claims 1-40 under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter regarded as the invention. Applicants, as shown above, have amended Claims 1 and 21 to clearly recite that in an encoding apparatus and a decoding apparatus, respectively, first and second encoding units are operated in parallel and first and second decoding units are operated in parallel. Applicants submit that the amended claims now particularly point out and distinctly define the subject matter of the present invention. Consequently, Applicants respectfully request withdrawal of this rejection.

The Office Action rejected Claims 11-20 and 31-40 under 35 U.S.C. § 101, as claiming a mathematical formula or algorithm. Without agreeing with the propriety of this rejection, Applicants have canceled Claims 11-20 and 31-40, and therefore this rejection is moot.

The Office Action objected to Claims 2, 4, 7, 12, 14, 17, 22, 24, 32, and 34 under 37 C.F.R. § 1.75 for not separating each element or step of the claim by a line indentation, and also, for Claims 11 and 31, for reciting a step of [for] encoding/decoding.

Cancellation of Claims 2, 4, 11, 12, 14, 17, 24, 31, 32, and 34 renders these objections moot. In regard to Claim 7, Applicants submit that it is in proper form.

The Office Action rejected Claims 1-40 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,029,264 (Kobayashi et al.), and separately, rejected Claims 1-40 as being anticipated by U.S. Patent No. 6,182,264 (Ott), and rejected Claims 1-40 under 35 U.S.C. § 103(a) as being unpatentable over Ott in view of Kobayashi et al. Applicants respectfully traverse these rejections. Cancellation of Claims 2-4, 11-20, 22-24, and 31-40 render these rejections moot.

Applicants submit that amended independent Claims 1 and 21, together with the remaining claims dependent thereon, are patentably distinct from Kobayashi et al. and Ott at least for the following reasons.

The aspect of the present invention set forth in Claim 1 is an encoding apparatus that includes a first encoding unit adapted to encode inputted data, an interleaving unit adapted to interleave the inputted data; and a second encoding adapted to encode an output of the interleaving means. The encoding apparatus executes a first encoding algorithm using the first encoding unit; executes a second encoding algorithm using the first encoding unit, the interleaving unit and the second encoding unit; and operates the first and the second encoding units, in parallel, in order to execute the first and second encoding algorithms in parallel.

Among other important features of Claim 1 is that an encoding apparatus (e.g., Fig. 7)¹ executes a first encoding algorithm using a first encoding unit; a second encoding algorithm using the first encoding unit, an interleaving unit and a second encoding unit; and operates the first and second encoding units, in parallel, in order to execute the first and second encoding algorithms in parallel. That is, the encoding apparatus shares the first encoding means to execute the first and second encoding algorithms, while the second encoding algorithm is executed by using the interleaving unit and the second encoding unit in addition to the first encoding unit.

The aspect of the present invention set forth in Claim 21 is a decoding apparatus that includes a first decoding unit adapted to decode inputted data; a first interleaving unit adapted to interleave an output of the first decoding unit; a second decoding unit adapted to decode an output of the first interleaving unit; and a second interleaving unit adapted to interleave an output of the second decoding unit. The decoding apparatus executes a first decoding algorithm using the first decoding unit; executes a second decoding algorithm using the first and second decoding units and the first and second interleaving units; and operates the first and second decoding units, in parallel, in order to execute the first and second decoding algorithms in parallel.

Among other important features of Claim 21 is that a decoding apparatus

¹(It is to be understood, of course, that the scope of Claim 1 is not limited to the details of this embodiment.)

(e.g., Fig. 9)² of the present invention executes a first decoding algorithm using a first decoding unit, executes second decoding algorithm using the first decoding unit, second decoding unit and first and second interleaving units, and operates the first and second decoding units in parallel in order to execute the first and second decoding algorithms in parallel. The decoding apparatus shares the first decoding unit to execute the first and second decoding algorithms, while the second decoding algorithm is executed by using the first and second interleaving units and the second decoding unit in addition to the first decoding unit.

Applicants submit that the above-described features of Claims 1 and 21 are not taught or suggested by either Kobayashi or Ott, when taken separately or in any proper combination (assuming such combination is permissible). Although Kobayashi and Ott may be deemed to teach using a plurality of encoding/decoding algorithms (e.g., column 4, lines 28-31 of Kobayashi and Fig. 1 of Ott), Applicants submit that nothing has been found in Kobayashi or Ott, when taken separately or in any proper combination, that would teach or suggest the amended features of Claims 1 and 21.

The other claims in this application depend from Claims 1 or 21 discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

²(It is to be understood, of course, that the scope of Claim 21 is not limited to the details of this embodiment.)

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and the allowance of the present application.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

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